THE JOURNAL
OF
POLITICAL ECONOMY

DECEMBER—1906

ECONOMIC AND SOCIAL EFFECTS OF THE INTERURBAN ELECTRIC RAILWAY IN OHIO[1]

During the last decade the growth of electric trolley systems in the United States has been very rapid. Before 1895 street railroads were hardly to be found running far outside city limits, animal power then generally in use being too expensive and too slow to permit of extensive rural lines. After the introduction of electricity, however, its greater cheapness made interurban lines, not only possible, but very profitable.

The first electric roads were opened in 1889 in Richmond, Va., Alleghany, Pa., and Washington, D. C. In 1902, less than fifteen years afterward, the total number of lines in the United States was 797, with a mileage of 22,577 miles. In 1890 there were only 8,123 miles of street railroads, of which seven-tenths still used animal power. In 1902, 97 per cent. used electric power. The development of electric transportation lines has, in fact, been very similar to that of the steam roads in their earlier history. Up to 1895 there were only local, city lines. For the next three years there was building of interurban lines in those places where they were most needed and profitable. From 1898 through 1901 was a period of rapid extension, and since then the shorter lines have been consolidated into larger systems—a process which has been attended by financial reorganization. For

[1] Many of the most interesting facts in this paper were gathered by members of the writer's class in railway transportation at Oberlin College.

example, the Lake Shore Electric, connecting Cleveland and Toledo, is a consolidation of four shorter lines.

So rapidly is the trolley net growing that it is now possible to go almost the entire distance from New York to Chicago by electric lines. In Ohio the system is particularly well developed. There is now complete connection from Buffalo to Detroit across northern Ohio. From the first, Ohio has been a favorite field for the building of trolley lines. In 1896 there were already sixty-nine chartered companies, with 1,250 miles of track. In 1902 there were sixty-two companies, operating 2,470 miles, or one-fifth the mileage of the steam roads. Of the electric roads 54 per cent. were distinctly extra-urban. It is said that nearly nine thousand miles of traction lines are built, or under construction, or planned in Ohio. Within the last three years two hundred companies, with a capital of some hundred millions, have been incorporated. Cleveland, Toledo, Columbus, Dayton, and Cincinnati are all centers of systems which fairly cover the state with a network of lines.

Most of the trolley lines in Ohio are or have been controlled by three large syndicates.[2] The lines between Cleveland and Toledo were controlled chiefly by the now defunct Everett-Moore syndicate. Those stretching between Cleveland and Cincinnati belonged to the Appleyard syndicate; while those between Toledo and Cincinnati have fallen under the control of the Pomeroy-Mandelbaum syndicate. The time-card issued by the Cincinnati, Dayton & Toledo Traction Company, belonging to the last-named group, says: "In a short time a full train of dining-, sleeping-, and observation-cars will start at Cincinnati and glide up the Miami Valley with all the comforts of home, the swiftness of lightning, and the cleanliness of Spotless Town." The date of the innovation, however, is not given.

The service is being rapidly improved both in speed and in comfort. The roadbed, which at first was laid along the side of the public highway and followed all its grades and curves, is now being laid with greater care, to prevent the jolting which has made trolley riding so unpleasant. Many roads own a private

[2] *Street Railway Journal*, 1903, pp. 172, 660, 728.

right-of-way over the greater portion of their lines, and there is an increasing tendency in this direction; in Ohio 27 per cent. of the track is on private right-of-way owned by the companies. Higher rates of speed, and straighter and more level tracks, are possible only where the railroads own their own right-of-way. The greatest difficulty which confronts the interurban lines is the problem of their entrance into the cities. But usually this is solved by running their cars in over the tracks of the city roads. Very high rates of speed are often obtained. The running time between Cleveland and Toledo is six hours; but limited trains stop only at the larger towns, making the trip in four and one-half hours.[3] The cars are also being improved; most of the newer cars are sixty feet in length. Special cars of various kinds are now built—private cars, dining-cars, funeral cars, express cars, and freight cars. Many of the cars have toilet accommodations; this is required by law in Wisconsin.

In many of the cities union interurban stations, conveniently located near the shopping districts, are provided. One of the finest and most complete stations of this sort in Ohio is to be found in Cincinnati, but there are as yet no terminal stations in Ohio which compare with the magnificent buildings erected in Indianapolis, Los Angeles, or Milwaukee. The station at Cincinnati is six stories high and contains on the first floor a general waiting-room, a ticket office, a cigar and news stand, a check-room, a passenger elevator, a ladies' waiting-room with a maid in constant attendance, and for the employees a lunch and reading room which is furnished with newspapers and periodicals. Two tracks run through the building, and all passenger cars stand inside until the time of departure. The second floor is equipped for the general offices of the company, while the engineers' offices occupy part of the third floor. The rest of the building is let for business offices. This station is within one block of Government Square, in the very heart of the city. Similar union stations are found in Toledo, Columbus, and elsewhere, so that,

[3] F. T. Carlton, "The Electric Interurban Railway," *Yale Review*, August, 1904, p. 182.

where a transfer is necessary, the trouble is reduced to a minimum.

One of the most important effects of the introduction of electric interurban lines has been the cheapening of travel. The fares have been greatly reduced below those previously charged by the steam roads. The average passenger fare per mile on the chief interurban lines is a little less than one and one-half cents. Broadly speaking, the steam-railway fares average about double those of the electric lines. The following table will show the difference in the rates of fare on steam and electric railways in Ohio:

COMPARATIVE FARES OF STEAM AND ELECTRIC RAILWAYS IN OHIO[4]

Journey	Distance (Miles)		Fare, One Way		Fare, Round Trip	
	Steam	Electric	Steam	Electric	Steam	Electric
Cleveland to Ravenna	57	45	$1.15	$0.70	$2.07	$1.10
Cleveland to Akron	38	36	1.00	0.60	1.80	1.00
Canton to Akron	23	21	0.70	0.35	0.83	0.65
Massillon to Uhrichsville	35	37	1.05	0.55	1.89	1.00
Cleveland to Creston	49	49	1.50	0.85	2.70	1.45
Columbus to Newark	33	37	1.00	0.60	1.80	1.00
New Castle, Pa., to Youngstown, O.	21	18	0.65	0.30	1.17	0.60

The electric lines have not only reduced the single and round-trip fares, but they have also frequently issued books which materially reduce the cost below the figures given. Thus the Cleveland & South-Western Railway issues a book good for six months, containing two hundred five-cent rides which may be used by a whole family, for eight dollars. The company also sells an interchangeable coupon book for ten dollars, in which there are twelve dollars' worth of five-cent rides. This book is honored by fourteen other roads in the state which issue similar books.

[4] *Street and Electric Railways*, 1902 (Special Report of the Department of Commerce and Labor, Washington, 1905), p. 110. By act of the legsilature in May, 1906, the maximum legal rate of fare for all steam railroads in Ohio was fixed at two cents a mile. The single fares today are accordingly considerable lower than those shown in the above table, but the round-trip fares remain much the same, as the roads have very generally refused to issue return tickets at a reduced rate.

This fact seems to indicate that the electric lines are making traffic arrangements with one another, profiting, no doubt, by the example of the steam roads. There is an unusual kind of ticket issued on the Western Ohio line which seems to be peculiar to this line. It is known as the "Lima trading ticket," and is issued by the Lima Merchants' Trading Association for the benefit of those persons who wish to trade in Lima. Individuals wishing to go there to shop purchase these tickets from the Western Ohio station agent for the same price as the regular ticket. When such person makes a purchase in any of the Lima stores whose names appear on the ticket, the clerk of that store, upon request, stamps the amount of the purchase on the ticket, and, if the purchases at all the stores amount to from five to twenty dollars (depending on the distance from Lima), upon presentation of this ticket to the station agent of the Western Ohio and Lima the full amount of the fare paid for the ticket is refunded.

This reduction in fares, together with other advantages of the electric lines has greatly affected the traffic of the steam roads, especially in the short-haul passenger traffic. In the last seven years the number of passengers on the steam railways has fallen off by twelve millions, not because there is less traveling, but because the competing trolley has stolen the traffic. There is little traveling now in Ohio by steam between points where the electric lines pass. This preference for the trolley for short-distance travel is due to several causes: (1) Most of the railroad stations are not in the center but on the edge of the towns, and are thus less conveniently situated than the electric lines, especially in stormy weather. (2) It costs less to go by the electric line. (3) It is very much more convenient, owing to the greater frequency of the service. Trolley cars usually run every hour, while steam trains run only three or four times a day. (4) The frequency of stops makes it possible for many to use the electric who could not use the steam lines.

Other advantages of interurban electric lines may be mentioned, although they are of less importance. The lighter trolley line, which can follow the natural lay of the land, is less disfiguring to the landscape than the heavily graded steam road. From

a purely aesthetic standpoint a ride by trolley offers many more attractions than travel on the steam cars between the same points. The freedom from smoke, too, is a great advantage, especially in summer. The electric lines often take a more direct route from town to town than would be possible for steam roads, and thus tap districts that would otherwise be without adequate transportation service.

The effect of interurban competition is clearly seen in the falling-off of the passenger traffic on the steam roads affected. The number of local passengers carried between Cleveland and Oberlin and intermediate points on the Lake Shore & Michigan Southern Railroad fell from 203,014 in 1895 to 91,761 in 1902; and the number carried between Cleveland and Painesville fell from 199,292 to 28,708.[5] On the Nickel Plate the number of passengers between Cleveland and Lorain fell from 42,526 in 1895 to 9,795 in 1902. The percentage of the total steam and electric traffic carried by electric lines between places served by both varies from 75 to 95. According to *Poor's Manual* for 1902, the average length of trip per passenger on the steam railroads in Ohio, Indiana, Illinois, Michigan, and Wisconsin was, in 1900, 33.80 miles; in 1901, 39.73 miles. Part of this increase in the length of trip was undoubtedly due to the loss of the local short-haul traffic to the electric lines. The effect upon the steam roads is noticeable from the fact that many of them have discontinued entirely or largely their local passenger service. For instance, several of the Lake Shore & Michigan Southern trains that used to stop at every station between Toledo and Cleveland stop now at only the more important places. All of the Pennsylvania trains used to stop at Woodville, but the Lake Shore Electric has absorbed practically all the local passenger traffic between Woodville and Toledo, and now only one or two passenger trains stop at that point.

But not all the business of the interurban lines has been stolen from the steam roads. Most of it has been new traffic, called into existence by the building of the electric line. The

[5] Ray Morris, "The Trolley System in Ohio," *Atlantic Monthly*, Vol. XCIII, p. 731.

representatives of an important company in Ohio said they were informed that, before the electric railway was built between two particular cities of medium size, the steam railroad did a business between them of about $2,000 per month. The electric railway now does three times that amount of business, with a very much lower rate of fare, while the steam railroad seems to be handling about the same volume of business as before.[6] From 75 to 95 per cent. of the traffic on the electric lines is between towns, and this in turn has served to stimulate a considerable amount of long-distance railroad travel, both by rendering the city more accessible and by developing the traveling habit.

The attitude of the steam roads toward electric competition has been extremely variable. In some cases railway fares have been reduced or the suburban service extended to meet the new competition; but the general view of railway men seems to be that the loss of business cannot be overcome by lowering the fares on steam railways. The character of the business is such that it is possible for the electric lines to handle traffic in smaller units. A car can be run as cheaply every half-hour as a train of six cars every three hours. On the steam railways, on the other hand, the more frequent the service and the smaller the train unit, the greater the expense. The character of the right-of-way and the terminal station also places the steam road at a disadvantage. The steam roads entering Columbus have felt the effect of trolley competition keenly and have cut their rates to meet it. The Big Four, the Pennsylvania, and the Hocking Valley have combined to issue a twenty-ride commutation book, which is interchangeable on any of the suburban trains of the roads mentioned, at the same rate as the single-trip tickets of the electric roads. The electric lines, however, issue a still cheaper book—500 miles for $6.25, or 1,000 miles for $12.50—which is good without limit of time on all the connecting interurban lines; and these have proved much more popular than the offer of the steam roads. In the vicinity of Cleveland another plan has been tried. The Big Four cut the rate from Wellington, where the

[6] *Street and Electric Railways, ut supra,* p. 111.

trolley crossed it, to Cleveland—a distance of fifty miles. The chief effect, however, was that people traveling in to Cleveland from points west of Wellington, with which there was no trolley competition, bought their tickets to Wellington, and then got off the train at that station and bought the low-rate tickets to Cleveland, continuing their journey on the steam road. Undeterred by this example, the Lake Shore Railroad has more recently reduced the fares from Norwalk, the terminus of the Cleveland & South-Western Electric Railway, to Cleveland. The round-trip fare was reduced from $2.80 to $2, which is only a few cents more than the fare on the electric line. "This is a rather new venture for the Lake Shore," said an official of the company, "but it may serve to bring back some of the business which has escaped us."[7]

A second solution of the problem which has been attempted by some steam railroads has been the building of trolley lines, the buying of existing lines, or, finally, the electrifying of their own road for suburban traffic. Among railroads of this type are the Cincinnati, Georgetown & Portsmouth, and a new line between Bridgeport and Zanesville. The Lake Shore is experimenting with motor cars.[8] Finally, in other cases the steam roads have recognized the futility of competition and the value of the electric lines, and have entered into traffic arrangements. As an illustration of this might be cited the arrangement entered into between the Lake Shore Electric, operating between Cleveland and Toledo, and the Clover Leaf Railway during the exposition at St. Louis. Through tickets were sold by the electric road to points on the Clover Leaf, and vice versa. Arrangements were also made with the Western Ohio and the Dayton & Troy systems of electric lines for a daily service between Dayton and Delphos, where direct connection was made with the Clover Leaf road. The action of the Clover Leaf Railroad was protested against by the Central Passenger Association, and it was forced to withdraw from the arrangement. More recently, however, the Wheeling & Lake Erie has arranged for an exchange of

[7] *Cleveland Plain Dealer*, March 2, 1905.

[8] *Ibid.*, May 29, 1905.

business with the Lake Shore Electric, the Canton-Akron, and the Stark Electric lines, and is understood to be willing to make the same arrangement with any other traction line that touches its system.[9]

In spite of the desirability of such interchange of business, it was stated at the convention of the American Street and Interurban Railway Association, held in Columbus, October 15–17, 1906, that up to the present time it had been almost impossible to get steam roads to recognize or work with electric roads in any way or manner, as, for instance, to co-operate for the development of freight business gathered by electric lines and delivered to the steam roads at points of intersection.

The freight and express business done by interurban lines has been of more recent development than the passenger business, and has not expanded nearly so rapidly. Of the 66,784 cars in use on the electric railways of the country only 1,114, or 1.7 per cent. are used exclusively for express, freight, and mail service. Ohio leads in the amount of combined freight and express receipts, these being $269,521 in 1902. According to an investigation made in 1903 by Mr. H. S. Cooper,[10] it would seem that most of the roads have not developed a regular express and freight business. Of one hundred and twenty-nine companies which answered his letter of inquiry, only thirty-four did a regular express business, using special cars for that purpose. Indeed, the expediency of developing such a service is not by any means agreed upon by electric-railroad men. The Cleveland lines have perhaps been the most aggresssive in the package-freight business, running express cars several times daily, and providing for a system of free collection and delivery. Among the companies whose freight and express business is especially important may be mentioned the Eastern Ohio Traction Company, the Western Ohio, Dayton & Troy, Scioto Valley, Toledo & Indiana, Toledo, Port Clinton & Western, Cincinnati, Georgetown & Portsmouth, Interurban & Terminal Railway Company of Cin-

[9] *Ibid.*, May 31, 1905.

[10] *Street Railway Journal*, p. 264.

cinnati, Cincinnati & Columbus, Stark Electric, Canton-Akron, Dayton, Covington & Piqua, Cleveland, Painesville & Eastern, the Dayton, Springfield & Urbana Electric, the Toledo & Western, and the Mahoning Valley Railway Companies. There is a great diversity in rates and classification among the different roads, both for freight and express.

> The two branches of business . . . . have been jumbled by electric-road operators in the Central West into a confused variety of methods and rates until at present hardly any two managements handle this service exactly alike. There are not less than eight distinct methods on Ohio roads at present.[11]

The business has been permitted to grow without any special regulation. At first, packages and bulky objects were placed on the rear platform of the passenger car, and a small charge of from five to twenty-five cents made. When this became too crowded, combination cars were built, part of which was given over to the carrying of express and small freight matter. Finally, separate express cars were constructed, solely for this business. The rates charged were, however, arbitrary and varied from road to road.

The express and freight business of the electric lines is as yet in its infancy, and any discussion of it must deal largely in prophecy. The articles now carried by lines doing this kind of a business in Ohio consist chiefly of fruits, produce, groceries, beer, farm produce, and merchandise in packages. One or two roads carry coal, ore, and stone, but heavy freight is usually not sought by the interurban lines. The past four years have, however, seen a wonderful expansion in the freight and express business of the Ohio roads. In the neighborhood of the cities the express business is more profitable and is better developed, but in the farming districts and the western part of the state the freight business is more developed. Thus the Toledo & Western runs through a rich farming district which has no other transportation service, and secures practically all the business. Not coming into competition with the steam roads, it has been able to make pro-rate and interchange

[11] *Street Railway Journal,* October 13, 1906, p. 677.

arrangements with a number of railways which it touches. For the year 1905 its freight and express business amounted to $75,000, or 40 per cent. of the total earnings. The freight-car lots handled in 1905 were 4,478, of which 725 were stone, 720 sugar beets, 525 live stock, 421 coal and coke, and 308 grain.[12] The Western Ohio Railway Company has issued what is probably the first basing sheet ever issued by an electric line, and has formed a traffic agreement with eight other lines forming a chain between Cleveland, Detroit, and Cincinnati.[13] This is suggestive of the development which the future may bring to the electric lines in the freight and express business. In general, there has not as yet developed any serious competition between the electric and steam roads in the carriage of freight, a natural line of division seeming to have shown itself in the kinds of business best adapted to each, the light-package express business going to the electric lines and the heavy and slower freight to the steam roads.

The northern Ohio roads do not conduct this business themselves, but have made arrangements with an express company known as the Electric Package Company, for which they furnish cars and from which they receive a portion of the gross receipts. Where the steam roads charge twenty-five cents for a seven-pound package, the electric line carries thirty pounds for twenty-five cents and leaves it almost at your door. In Toledo the Lake Shore Electric and other suburban lines have introduced a system which is of great convenience to the patrons. At the Union Station you may buy for five cents a check which entitles you to a box in the station, to which all your parcels will be sent from the various stores of the city on presentation of the check. The accommodation is simply another evidence that the electrics are after the traffic.

The electric line does not affect the parallel steam lines so much in their freight traffic as in the passenger traffic. The freight service of the electric railways has been confined, as yet,

[12] *Street Railway Journal,* October 13, 1906, p. 678.

[13] *Street Railway Review,* March 15, 1906.

for the most part to small perishable articles. The farmer who lives within a reasonable distance of the electric lines sends by them his milk, butter, provisions, vegetables, and fruits to the city market. The ease and promptness of this service have called into being a great deal of business which was not previously carried on at all, or was cared for by wagon rather than by steam railway. The nature of farm industry in the neighborhood of larger cities has been materially affected by the advent of the trolley. In many cases truck-farming was developed as soon as access was gained to a profitable market. On the other hand, a large return business has been secured by the electric lines in carrying groceries, meats, dry-goods, and other light articles from the town to the farming districts. Thus the Toledo & Indiana package cars which operated in Toledo in 1905 handled 4,600,000 pounds of freight matter, of which 3,800,000 pounds were outbound and 800,000 incoming; this seems to show that the bulk of the business is in goods shipped by city jobbers to country merchants, rather than in incoming produce.

The effect of the building-up of an express and freight business, as well as the passenger service, has been far-reaching and various, not merely upon the country districts, but also upon the smaller towns, and even upon the business of the larger cities. The trolleys have undoubtedly had an effect in building up the suburban towns on the outskirts of the larger cities, like Cleveland, Columbus, and Cincinnati. Thus the population of Cleveland's suburbs increased between 1890 and 1900 from 34,522 to 57,352.[14] While, of course, all of this increase was not due to the building of the interurban electric railways, still this was undoubtedly the most potent factor. Suburban land has gone up in value along practically all the lines, and hundreds of men doing business in the city have moved out to suburban farms or residences within convenient distance of the city. The most obvious effect of the trolley upon the small town through which it goes is the improved appearance of the places along the line of the electric railway. As a rule, the residences and the farms

[14] *Street and Electric Railways*, p. 29.

that can be seen from the trolley window are much better kept and more sightly than those only a block or so away.

The effect upon the merchants in the smaller towns is more problematic. In many a small town throughout Ohio the building of the electric lines raised great opposition. The merchants of Oberlin got out hand-bills denouncing it; and the same was true in other places. A canvass of a number of merchants in some of the smaller towns in northern Ohio seems to indicate that, on the whole, they have gained rather than lost by its advent. In the case of those merchants who handle the most valuable and least perishable classes of commodities, the competition of the city stores rendered accessible by the electric railway has been most severe. The dry-goods merchants have been most affected; but even here the gain from the surrounding rural districts has often compensated, or nearly compensated, for the loss to the city. In general, the effect will differ according to the size of the town, its distance from the city, the enterprise of its merchants, and other similar factors. The smaller merchants have been stimulated to greater exertion, to the ultimate benefit of the consumer; while some have probably been forced out of business. Some of the effects are rather curious. The price of milk and butter in the smaller towns has, in general, gone up, owing to the ease with which the farmers can now send in these products to the city. In one place the livery business has been much increased since the advent of the trolley. According to individual expressions of opinion, the dry-goods merchants generally thought their business had been harmed; the grocers found a distinct advantage in the ease and quickness with which they could get fresh vegetables and supplies; the clothing men claim, on the whole, an increase; the hardware men can detect no difference.[15]

[15] The following statement from the editor of the *Bellevue Gazette,* a small town near Toledo, may serve as typical: "When the Lake Shore Electric was built some four or five years ago, there was violent opposition on the part of some of our business men, who claimed that it would ruin trade and that it would take people to the city to trade. Time has shown the reverse to be true. It has stimulated trade and improved it, so that those who opposed the road are now its firmest advocates."

Of all classes affected by the electric railways, the farmers have, undoubtedly, benefited the most. Even where the mileage of the steam roads was greatest, they were inaccessible to the average farmer and of little convenience to him. The electric railway, on the other hand, often passes his very door. According to the United States census report on street and electric railways,[16] the interurban companies estimate that from 5 to 20 per cent. of their traffic is from the rural population; the farmer and his family can reach the neighboring villages much more quickly, cheaply, and comfortably by trolley than by wagon. There has been a wonderful improvement in the position of the farmer, economically, socially, and intellectually, by reason of the building of the electric railway. Hardly less important, however, in ameliorating the condition of the farmer are the telephone and the rural free delivery. The economic benefits may be noted in the increase in the value of farm land, which has risen from 20 to 50 per cent. in value along the lines of most of the roads. A farm near Oberlin, on the Wellington division of the Cleveland & South-Western, was purchased for five thousand dollars before the road was put through, and recently an offer of ten thousand dollars was refused for the same property. In another case three thousand was paid, and, after the building of the trolley, an offer of fifty-five hundred was refused. Farms situated along electric lines are in constant demand, and the real-estate dealers testify that the first question a prospective buyer asks is: "Does the electric railroad run near this farm?" The interurban has also enhanced the value of the farms at a distance, though not nearly so much as of those immediately adjacent. This increase in value simply measures the increased productive power of the farms, because of the opening-up of a market for more profitable products than were previously possible. The day is passing when the farmer peddles his milk from door to door, or hawks his vegetables through the streets or allows his wife to take her butter and eggs to favored customers. He now puts his milk in large ten-gallon cans, attaches a ticket, and places

[16] P. 111.

them on a little platform in front of his house, from which the electric car picks them up and carries them to the city market, where the prices are highest. The expense of this service is very slight; the rates on practically all of the roads are the same —namely, one and one-half cents per gallon for any distance up to a hundred miles, this rate including the return of the empty cans. One dairy alone in Cleveland receives in this way from the surrounding farms about ten thousand gallons per day, much of which would have been inaccessible had it not been for the interurban railway. Indeed, there would be a milk famine in Cleveland were the express cars to stop running. The Eastern Ohio line, which traverses a rich farming district, handles 5,000 to 6,000 gallons daily, and its receipts from milk in 1905 were $25,480. The Cleveland & Southwestern comes a close second, hauling an average of 800 cans a day. Special milk trains are run on many of the roads in the early morning and the evening.

Although milk is the most important product of the farm for which the electric is being used, the farmer uses it for many other products. Butter, eggs, hogs, sheep, chickens, calves, small and large fruit, farm produce of every sort, are shipped in by the freight and express cars. The rate for eggs from Wellington to Cleveland, a distance of fifty miles, is seventeen cents for a case of thirty dozen eggs, or a little more than one-half cent per dozen. In general, the rates of transportation are much lower than those of the steam roads, while the transportation service is quicker and safer. It has been said that the electric railways are getting rich from the crumbs which the steam roads and express companies have despised. In still another way the economic position of the farmer has been improved by the interurban roads. Labor has been made more mobile, whether that of the surplus farm-hand during the dull season, or that of the city-dweller who is brought to the farm when he is most needed, and when wages are the highest. Artisans, too, move more readily from place to place, and are enabled to dispose of their labor in a much wider market.

Not less important in its influence upon the endurableness of farm life is the socializing effect of the electric road; the contact with town and city life has contributed greatly to the breadth of view, the culture, and the happiness of the farmer's family. The comforts of the home have increased, and table and dress have been improved, since the shops of the town have been made more accessible. The rural population has, moreover, been enabled to take a more active part in social life, and has been stimulated to indulge in more recreation. Many are enabled to attend the theaters, concerts, lectures, and other forms of entertainment and instruction in the city. All the varied interests of the urban dwellers have been made accessible to those living in the country. In Lorain County, for instance, a Volunteer Firemen's Association has been formed, and, since the advent of the electric road, tournaments are held every year in some town in the county. These were made possible only by the interurban lines. County fairs also, although already well patronized, have within the last few years taken on new life. In Oberlin the Merchants' Association has organized entertainments every Saturday during the summer months at which prizes are given for various attractions. Excursion rates are given over the electric roads, and from the standpoint both of the farmer, the merchant, and the electric line they have been a great success. Many of the interurban lines own and conduct pleasure parks or resorts, which are largely patronized during the summer months.

Finally, the children in the rural districts are enabled by means of the interurban readily to avail themselves of the superior school facilities of the town. Of the 363 students in the Elyria High School, 125 live in the surrounding country and use the electric lines in coming to school; of these at least two-thirds, according to a statement of the principal, would be unable to attend but for the interurban road. So large a traffic has been stimulated in this manner that the company has provided a special car running east from Elyria to Ridgeville, and has provided a commutation book which secures half-fare for the students. Thus a pupil gets a book containing forty rides to North Olmstead for three dollars, or a rate of seven and one-half

cents per ride, the regular fare being fifteen cents. The modern movement for the consolidation of rural schools has gained great impetus throughout Ohio since the development of the electric lines.

The financial showing of the interurban roads is not so favorable as their large traffic and great popularity would lead one to expect; and yet, in spite of low passenger and freight rates, lines have been able to make very large profits; but, following the example of the steam roads, they have been very largely overcapitalized. There are three causes which have led to this overcapitalization of the electric roads. First, the desire of the roads to deceive the public as to their earnings; for, as soon as too large dividends are declared, the public demands either lower rates of fare or higher rates of taxation. Second, the fact that the stock sells better if the rate of interest is moderate, the investors feeling that a high rate of interest may denote a risk in the undertaking. Third, stock-watering brings large profits to the promoters and managers.[17] The average rate of interest on trolley stock is 4.7 per cent., somewhat less than on railroad stock, though in reality the net income above expenses on electric is probably 50 per cent. more than that of the steam roads. This in itself shows how very greatly the roads are overcapitalized, but the difference between cost and capitalization shows it even more clearly. A writer in the *Electric World and Engineer* (1902) estimates the average cost of an interurban railroad designed for freight and passenger traffic at eighteen thousand dollars a mile; allowing two thousand dollars for contractor's profits, it makes a total of twenty thousand per mile. The street and electric railways of the United States were capitalized in 1902 at $96,287 per mile of single track owned, although in Massachusetts, where stock-watering is carefully guarded against, the average capitalization is only $39,067, stock and funded debt, per mile of line.

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[17] *Report of the Industrial Commission,* Vol. IX, pp. 88, 90.